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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TSENG, CHENG YUAN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/736,125	Applicant(s) PAI ET AL.	
	Examiner CHENG-YUAN TSENG	Art Unit 2184	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/15/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 22, 2009 has been entered.

Response to Amendment

2. The objections to drawings and claims, claim rejections made under nonstatutory obviousness-type Double Patenting, and claim rejections made under 35 U.S.C. 112 have been withdrawn due to the amendment filed on July 22, 2009. It is noted that applicant appears not wishing to amend fig. 5 for clarifying the signal from 611 to 555(1).

Specification

3. The disclosure is objected to because of the following informalities:

In para. 0038.1, line 4, correct spelling "p9ort" with "port".

In para. 0026, 0039, applicant must correct the paragraph numbers. It appears that applicant's amendment mistakenly deleted para. 0026 while amending para. 0039. See specification amendment, page 5, filed on July 22, 2009.

Appropriate correction is required.

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Referring to claim 18, lines 4 and 7-8, the claim terminology "**specified selectable range**" is considered lacking proper antecedent basis to original specification. In particular, the specification does not even use the word "**specified selectable**" for the range of a plurality of sequential data words. The original disclosure merely indicates a command to fetch data words in an address range, such as in para. 0034.

Claim 24 has similar problem.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 24-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Referring to claim 24, lines 5-6, it is unclear what is **"starting at a beginning address and ending at an ending address."** For example, it is unclear whether the clause is to modify the **"selectable range"**, **"plurality of sequential data words"**, or **"memory"**.

As to claims 25-27, they are depending on claim 24. Therefore, they are rejected as set forth above accordingly.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless - (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 18-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee (U.S. Patent 6,842,219), hereinafter referred to as Lee.

Referring to claim 18, Lee discloses **a direct memory access controller** (fig. 2, decoding processor 201 with DMA units), said direct memory access controller comprising:

a state logic machine (fig. 4, decoding sequencing control unit DSCU 203a; fig. 2, DSCU 203a; fig. 9, state transition of DSCU 203a; note, each arc of the diagram represents a command for transition to another state) for **receiving a single command**

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(fig. 4, receiving commands from RISC interface 401; col. 10, lines 33-36, data/address/control signals from RISC; fig. 6, coprocessor command for DSCU; col. 4, lines 27-29) to provide **a specified selectable range** (col. 11, lines 15-19, address range of external memory to be accessed; col. 4, lines 27-29, coprocessor command of access external memory) of **a plurality of sequential data words** (col. 11, lines 62-65, DSCU carries sequential sequence control of MPEG stream; col. 12, lines 38-41, for example, macroblock as data words); and

a memory controller (fig. 11, buffer controller 1113 of variable length decoder VLD 203ba; fig. 2, VLD 203ba; fig. 12, reversal logic) for fetching **a first portion** (fig. 11, a portion of VLD input buffer 1112; col. 13, lines 27-35, fetch into barrel shift 1104 to lower 32 bit) of the specified selectable range and **a second portion** (fig. 11, a next portion of VLD input buffer 1112; col. 13, lines 27-35, move lower 32 bit to higher 32 and fetch new lower 32 bit) of the specified selectable range after fetching the first portion, wherein the second portion of the range has **a lower address than** (col. 13, lines 27-35, barrel shifter 1104, the new fetch is always shift into lower 32 bit address) the first portion, after the state logic receives the single command.

Referring to claim 24, Lee discloses a method for fetching data words, said method comprising:

receiving a single command (fig. 4, receiving commands from RISC interface 401; col. 10, lines 33-36, data/address/control signals from RISC; fig. 6, coprocessor command for DSCU; col. 4, lines 27-29) to provide **a specified selectable range** (col. 11, lines 15-19, address range of external memory to be accessed; col. 4, lines 27-29, coprocessor command of access external memory) of **a plurality of sequential data words** (col. 11, lines 62-65, DSCU carries sequential sequence control of MPEG stream; col. 12, lines 38-41, for example, macroblock as data words) in **a memory** (fig. 2, external memory via 215), starting at **a beginning address** (col. 10, lines 45-46, start address of the memory) and ending at **an ending address** (col. 10, lines 45-46, end address of the memory);

fetching a portion (col. 6, lines 58-60, four words), in **a forward address order** (col. 13, lines 33-35, increased address), of the range of **sequential data words** (col. 13, lines 33-35, bit stream), said wherein said portion of the range of sequential data words consists of **a predetermined amount of data words** (col. 6, lines 58-60, four words) that conclude with and precede the ending address, and wherein the predetermined amount of data

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words is equivalent to **a capacity of a local buffer** (col. 6, lines 58-60, a one line capacity of a cache memory);

storing (col. 6, lines 58-60, fill the cache memory) the predetermined amount of data words that conclude with and precede the ending address in the local buffer;

fetching, in the forward address order, at least one preceding portion (col. 13, lines 33-35, increased address) of the range of sequential data words, wherein each of the preceding portions of the range of sequential data words consist of the predetermined amount of data words; and

wherein **a one of the preceding portions** (col. 10, lines 49-55, backward decoding; col. 15, lines 49-52, MPEG-4 rewinding and error resilience, the point of error has beginning address) of the range of sequential data words comprises the beginning address, truncating those data words that precede the beginning address.

As to claim 19, Lee discloses the direct memory access controller of claim 18, wherein the memory controller fetches the first portion of the range and the second portion of the range in **a forward address order** (col. 13, lines 33-35, increased address).

As to claim 20, Lee discloses the direct memory access controller of claim 18, further comprising: **a local buffer** (col. 6, lines 58-60, the cache memory; and fig. 16, DBC MEM) for storing the first and second portions in **a forward address order** (col. 13, lines 33-35, increased address), said local buffer comprising **a plurality of data words** (fig. 16, DBC MEM, four words).

As to claim 21, Lee discloses the direct memory access controller of claim 20, wherein the plurality of data words of the local buffer are **narrower in width** (fig. 16, DBC MEM with 16 bytes vs. input stream in words) than the sequential data words.

As to claim 22, Lee discloses the direct memory access controller of claim 20, further comprising: **a port** (fig. 12, PMU IN) for transmitting the contents of the plurality of data words of the local buffer in **a reverse address order** (fig. 12, reversal logic).

As to claim 23, Lee discloses the direct memory access controller of claim 22, further comprising: **at least one multiplexer** (fig. 12, multiplexers inside 1203) for reversing

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the bit positions of contents of **at least one of the data words** (fig. 12, B DO[31:0]) of the local buffer.

As to claim 25, Lee discloses the method of claim 24, further comprising: **loading** (fig. 12, load into CLUST DEC 1202) the portion and the at least one preceding portions of the sequential data words into the local buffer.

As to claim 26, Lee discloses the method of claim 25, further comprising: **reversing** (fig. 12, reversal logic) the portion and the at least one preceding portions of the range of sequential data words.

As to claim 27, Lee discloses the method of claim 26, further comprising: **reversing** (col. 10, lines 49-55, backward decoding; col. 15, lines 49-52, MPEG-4 rewinding and error resilience, the point of error has beginning address) the truncated one of the preceding portions of the range of sequential data words that comprises the beginning address.

As to claim 28, Lee discloses the direct memory access controller of claim 18, wherein the first portion and the second

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portion are **adjacent to each other** (fig. 14, bit stream forms the first/second portions, stream has adjacent bits).

As to claim 29, Lee discloses the direct memory access controller of claim 18, wherein the specified selectable range of the plurality of sequential data words is **less than** (col. 11, lines 15-19, address range of external memory to be accessed is less than the external memory range) **a memory** (fig. 2, external memory via 215) storing the plurality of sequential data words.

Response to Arguments

9. Applicant's arguments filed on July 22, 2009, regarding the 35 U.S.C. §102 have been fully considered, but they are not deemed to be persuasive, or moot in view of new ground of rejection as set forth above.

Applicant argues that Lee does not disclose amended independent claims in "a state logic machine for receiving a single command" of claim 18, "a single command to provide a specified selectable range of a plurality of sequential data words" of claim 24, and "wherein the specified selectable range of the plurality of sequential data words is less than a memory storing the plurality of sequential data words" (pages 12-14).

Examiner disagrees with Applicant, because the state logic machine is anticipated by Decoding Sequencing Control Unit (DSCU) and its state machine 404 as shown in fig. 4. The DSCU clearly receives commands from RISC interface 401 with its coprocessor interface 402. Furthermore, as a MPEG stream decoding control, the DSCU receives command to fetch MPEG stream as sequential data words for decoding. The specified selectable range is the fetch size of each MPEG stream fetch from external memory. The MPEG stream is the sequential data words. Lastly, "a memory" is the external memory, in which it is always more than any size of range.

Conclusion

10. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See M.P.E.P 707.05(c).

US Patent

- Varanasi (U.S. Patent 6,504,871) discloses IDCT processor for use in decoding MPEG.

11. The examiner requests, in response to this office action, support be shown for language added to any original claims on amendment and any new claims. That is, indicate support for

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newly added claim language by specifically pointing to page(s) and line number(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application. When responding to this office action, applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections. See 37 C.F.R. 1.111(c).

In amending in reply to a rejection of claims in an application or patent under reexamination, the applicant or patent owner must clearly point out the patentable novelty which he or she thinks the claims present in view the state of the art disclosed by the references cited or the objections made. The applicant or patent owner must also show how the amendments avoid such references or objections.

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Cheng-Yuan Tseng whose telephone number is (571)272-9772, and fax number is (571)273-9772. The examiner can normally be reached on Monday through Friday from 09:00 to 17:30 Eastern

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Time. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Henry Tsai can be reached on (571)272-4176. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866)217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call (800)786-9199 (IN USA OR CANADA) or (571)272-1000.

/Cheng-Yuan Tseng/

Patent Examiner, AU 2184